Beau Carlson

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SUMMARY

Master's student in Computer Engineering at the University of Illinois, equipped with practical experience in edge computing and industrial IoT through extensive academic projects. Proficient in C# and Python programming, focusing on developing scalable software solutions. Demonstrated expertise in network fundamentals, including TCP/IP and secure communication matters. Excels in collaborative efforts, consistently contributing innovative technology insights that drive success in research-driven environments.

EDUCATION

Master's Degree in Computer Engineering 2026

University of Illinois GPA: 3.8 *Champaign, IL*

Coursework: *Networking, Distributed Systems, Edge Computing, Software Engineering*

Bachelor's Degree in Computer Engineering 2024

University of Illinois GPA: 3.7 *Champaign, IL*

Coursework: *Programming, Data Structures, Algorithms, Digital Systems*

TECHNICAL SKILLS

- **Programming Languages:** C#, Python
- **Networking Principles:** TCP/IP, Routing, DNS
- **Software Development Tools:** Git, CI/CD, Unit Testing
- **Industrial IoT Technologies:** Edge Devices, Cloud Integration, MQTT
- **Analytical Frameworks:** Data Visualization, Real-Time Processing, Monitoring Systems
- **Project Management Tools:** Trello, JIRA, Asana
- **Cloud Platforms:** AWS, Azure, Google Cloud
- **Documentation Standards:** IEEE Formatting, Markdown, LaTeX
- **Security Protocols:** VPNs, Firewalls, Intrusion Detection
- **Research Methodologies:** Empirical Studies, Case Analyses, Technical Writing

SKILLS

- C#
- Python
- Edge Computing
- Industrial IoT
- Networking
- CI/CD
- Data Analytics
- Software Prototyping
- Agile Development
- Data Processing
- System Integration
- Performance Analysis
- Network Security
- Device Management

EXPERIENCE

Research Assistant January 2025 - Present

University Research Lab *Champaign, IL*

Supported cutting-edge research in edge computing architectures, enhancing scalability for diverse industrial applications.

- Executed rigorous study on edge computing, focusing on scalability and performance challenges in practical settings.
- Developed prototypes utilizing C# and Python to streamline data processing and enhance analytics within IoT ecosystems.
- Engaged collaboratively with faculty and peers during system testing phases, driving improvements across distributed frameworks.
- Inspected network conditions rigorously, identifying critical issues while ensuring seamless edge-to-cloud connections.
- Authored detailed technical reports summarizing findings, projecting potential innovations for publication at academic venues.
- Effectively communicated research outcomes during presentations, gaining acknowledgment from both faculty and industry professionals.

Capstone Project Developer August 2024 - December 2024

Student Innovation Lab *Champaign, IL*

Conceptualized and developed an innovative prototype system designed for real-time monitoring of industrial equipment.

- Pioneered a system leveraging edge analytics to monitor equipment operations via immediate data processing capabilities.
- Implemented features to manage devices effectively and crafted workflows focused on reliability across processing events.
- Linked various datasets into the prototype, collaborating closely with cross-functional teams to achieve holistic integration.
- Conducted thorough evaluations of system efficiency, producing actionable insights that informed strategic optimizations.
- Delivered dynamic project presentations to faculty, receiving commendations for creativity and execution.

- Utilized Git effectively for version control, integrating automated testing strategies to sustain code quality.

Hackathon Team Member

March 2024

Various Events

Springfield, IL

Collaborated intensively during a competitive hackathon to devise IoT-based solutions for smart city initiatives.

- Formulated an application prototype using edge devices to engage environmentally focused monitoring points.
- Worked alongside multidisciplinary teams, balancing tech-stack proficiency with practical IoT applications in tight deadlines.
- Ensured efficient and secure device communication using extensive understanding of networking protocols.
- Exhibited presentation skills on project day, showcasing effective teamwork under challenging time constraints.
- Acquired adeptness in rapid iteration cycles and agile methodologies relevant for current tech landscape developments.

LEADERSHIP & AWARDS

- Dean's List, University of Illinois (2024, 2025)
- First Place, Regional Hackathon (2024)

CERTIFICATIONS

- Certified in Python Programming 2025
- AWS Cloud Practitioner 2025

PROFESSIONAL AFFILIATIONS

- Member, Computer Science Club, University of Illinois (2023 - Present)
- Volunteer Tutor, STEM Mentorship Program (2023 - Present)

LANGUAGES

- English (Native)

ADDITIONAL INFORMATION

Work Status : Authorized to work in United States. No sponsorship required.

REFERENCES

AVAILABLE ON REQUEST